

# ELORIE BERNARD-LACROIX

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## SUMMARY

Keen and curious third-year Engineering Science student at the University of Toronto with a profound interest in machine learning, data science, and robotics. 5 years of experience in object-oriented programming with a variety of languages, including Java, C, and Python. 5 years of experience in robotics and computer-aided design. 4 years of experience in data analysis.

Languages: English, French

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## EDUCATION

### University of Toronto

Sept 2022 – May 2027

Bachelor of Applied Science (BASc) in Engineering Science + PEY, Major in Machine Intelligence Toronto, ON

- Relevant Courses: Introduction to Programming (Python), Engineering Mathematics & Computation (MATLAB), Computer Algorithms & Data Structures (C), Probability & Statistics, Intercultural Communication & Leadership
- Awards: Procter & Gamble scholarship, Dean's Merit Award (University of Toronto), Faculty of Applied Science and Engineering Admission Scholarship (University of Toronto)

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## PROFESSIONAL EXPERIENCE

### Test Automation and Vehicle Instrumentation Intern

May 2024 – Aug 2024

Bombardier Recreational Products

Valcourt, QC

- Developed a Python package that automates a battery test bench in accordance with stakeholder needs and IEC standards. Created technical documentation and flow charts for the program.
- Read and created new electrical schematics, mechanical drawings, bill of materials, and budgets to troubleshoot and maintain 3 towing dynamometers (trailers equipped with an eddy current brake to apply a load to vehicles).
- Created a Google Sheets tool with AppScript to facilitate the maintenance and operation of equipment.
- Gave a technical presentation to over 30 people, presenting the tools that I created during my internship and how to use them.

### Information Technology Auditing Intern

May 2023 – Aug 2023

Treasury Board Secretariat of the Ontario Public Service

Toronto, ON

- Designed presentations in Power BI for a team of over 10 people.
- Compiled over 50 extracts of research with another intern on I&IT talent management in interactive Excel sheets with different views, including pivot tables and filtration options to assist the team in an upcoming audit.
- Used standards provided by ISO, COBIT, NIST, and GO-ITS to supplement research and guide audit recommendations.
- Recorded meeting notes with another intern for client interviews, managed documents, proof-read the audit report and performed research to assist in a 3-month audit of End-User IT Asset Lifecycle Management

### Information Technology Technician

Apr 2022 – Aug 2022

Canada's Wonderland

Vaughan, ON

- Collaborated with three other technicians to perform upgrades to Symphony 2.0 and deploy over 300 POS systems in the park, including their respective peripherals (scanners, printers, cameras) and required peripheral drivers, to ensure a fully operational cashless park.
- Troubleshooted networking, hardware, and software issues for employees in the office.
- Configured Cisco network phones and Cisco Finesse (queues shared among phones) to allow for more effective online customer service support. Carefully documented this process for future technicians.

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## COMMUNITY EXPERIENCE

### Software Member of the Humanoid Robosoccer Club

Sept 2023 - Present

University of Toronto Robotics Association

Toronto, ON

- Using ROS, Ubuntu, and various simulations to program an autonomous humanoid soccer-playing robot. Previously worked on computer vision and camera calibration. Now working on strategy code.

### President of FRC Robotics Club

Sept 2019 - June 2022

Alexander Mackenzie High School

Richmond Hill, ON

- Managed over 50 people and 9 leads, to host workshops teaching CAD (Onshape), programming (Java), and electrical control of the robot.
- Took part in building a robot that could collect and shoot balls during a game with 5 other robots (includes a 30-second autonomous period).

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## PROJECTS

### Synonym Detector Python, semantic similarity

[GitHub repository](#)

Identifies the synonym of a given word with a 70% accuracy in linear time.

### Seam-carving program C, dynamic programming

[GitHub repository](#)

Iteratively removes parts of an image that are the least important, to narrow the image without distorting it.

### Gomoku AI Python

[GitHub repository](#)

Interacts with the user to imitate a game of Gomoku, and includes a built-in smart autonomous player.

### Predicting Failure Load MATLAB

[GitHub repository](#)

Calculates and graphs the factor of safety of a bridge design (plate buckling, compression, shear, etc). Result: 3rd place.

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## CERTIFICATIONS

### Power BI Top Skills Issued by LinkedIn

[View credential](#)

Importing data, transforming data, managing relationships, working with Data Analysis Expressions (DAX), and building visualizations and reports

### Data Science Foundations Issued by IBM

[View credential](#)

Understanding data methodologies and tools such as Jupyter notebooks.

### Block Chain Essentials Issued by IBM SkillsBuild

[View credential](#)

Learning about blockchain for business and its key use cases.

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## TECHNICAL SKILLS & TOOLS

- Programming Languages: Python, C, Java, MATLAB
- Web development: HTML/CSS, Javascript
- Data & ML: PowerBI, libraries (Pandas, NumPy, Scikit Learn), Jupyter, Anaconda/Conda
- Enterprise IT: automation, hardware troubleshooting, serial communication, computer networking
- Robotics: ROS, Ubuntu, control systems, computer vision (e.g. camera calibration), simulation, Computer-aided design (OnShape, Fusion360, AutoCAD)
- Workflow & Documentation: GitHub, VS Code, Microsoft Office, LaTeX, Markdown, flowcharts (Visio, Canva)